

## CLAIMS:

1. A two speed transmission including:
  - an input shaft;
  - a lay shaft spaced from the input shaft;
  - 5 a first gear train connecting the input shaft to the lay shaft;
  - a second gear train connecting the lay shaft to an output shaft the gear train including a one way clutch; and
  - a clutch for engaging the input shaft with the output shaft the arrangement being such that when the output shaft is disengaged from the input shaft power is transmitted
  - 10 to the output shaft via the first and second gear trains and the lay shaft.
2. A two speed transmission as claimed in claim 1 further including a dog clutch for disengaging the lay shaft.
3. A two speed transmission as claimed in claim 1 or 2 wherein the transmission is arranged such that when the clutch is disengaged, power is transmitted from the input
- 15 shaft via the gear trains and the lay shaft via the one way clutch to the output shaft which provides first gear and wherein when the clutch engaged power is transmitted from the input shaft directly to the output shaft to provide a second, relatively higher gear.
4. A two speed transmission as claimed in any preceding claim wherein means for
- 20 disengaging the one way clutch are provided to allow the output shaft to be run in reverse.
5. A two speed transmission as claimed in any preceding claim further including a control system is provided for controlling slippage of the clutch.
6. A two speed transmission as claimed in claim 5 further including means for
- 25 monitoring both the input shaft speed and the output propeller speeds and wherein the control system is arranged such that the slip speed of the clutch may be controlled by using the output speed as an input to control the slip speed, allowing for clutch slip at any speed and torque.
7. A two speed transmission system for a marine craft comprising:
  - 30 an input shaft;
  - an output shaft,
  - a first gear train for connecting the input shaft to the output shaft for driving the same in a first gear;

a second gear train connecting the input shaft to the output shaft for driving the output shaft in a second gear; and

a single clutch means for connecting the input shaft to the output shaft at a gear ratio other than one to one.